

AIR FORCE PROGRAMS

ALR-69A Radar Warning Receiver (RWR)

SUMMARY

- ALR-69A is a significant upgrade to the previous (ALR-69) system, with new hardware and potentially significant performance improvements.
- In the past, technical difficulties plagued the program.
- The modified Test and Evaluation Master Plan (TEMP) incorporates testing on both the C-130 and \ F-16 prior to the full-rate production decision to buy ALR-69A systems. Adequate testing on each of the additional installations (e.g., C-17, A-10, etc.) is necessary before a full-rate production decision.
- Operational assessment (OA) is to start in FY05.



Digital RWR Replaces Obsolete ALR-69 LRU's With 3rd Generation Broadband Digital Receiver Technology



The modified Test and Evaluation Master Plan incorporates testing on both the C-130 and F-16 prior to the full-rate production decision to buy ALR-69A systems.

SYSTEM DESCRIPTION AND MISSION

The ALR-69 has served as the RWR for multiple aircraft types since the early 1970s. In 2001, the Air Force established a modification program to improve reliability, maintainability, and performance. The resulting system, designated the ALR-69A, will require only minor changes to the aircraft installation provisions.

The initial program addresses equipment for the Air Force Special Operations Command C-130 variants, Air Mobility Command (AMC) C-130s, and F-16 aircraft. AMC C-130 is not formally part of the program, but is providing risk reduction aircraft and a backup lead test platform if necessary. This effort will reduce the number of line replaceable unit types in the system from nine to five, and the total number of line replaceable units from twelve to eight.

There are four phases of the ALR-69A program upgrade:

- The first phase – Core Phase
- The second phase – Spiral 1
- The third phase – Spiral 2
- The fourth phase – Spiral 3

The Core phase (funded) addresses the issue of obsolescent parts and incorporates digital receiver technology for initial C-130 and F-16 installations.

Spiral 1 Single-ship (partially funded) is intended to incorporate software algorithms and deliver geolocation capability. Geolocation fidelity will approach that which is needed for weapon targeting requirements.

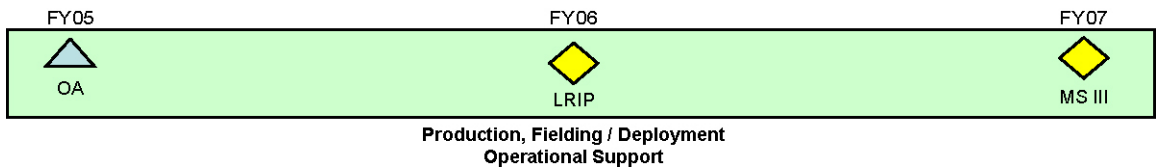
Spiral 2 Multi-ship (partially funded), the Advanced Tactical Targeting Technology, will incorporate new software. It will also incorporate an additional circuit card in the processor line replaceable units to enable threat geolocation good enough to support Global Positioning System-guided weapons employment and weapons targeting accuracy.

Spiral 3 (unfunded), the Specific Emitter Identification, is planned to incorporate new software to provide robust specific emitter identification that will enhance correct threat identification and lessen ambiguities.

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Since the program’s initiation, the program has suffered from technical difficulties that have resulted in schedule delays. Development costs have grown from \$36 million to \$72 million. However, Core phase development is proceeding.

TEST AND EVALUATION ACTIVITY



The Air Force Operational Test and Evaluation Center plans to conduct an OA in FY05 to support a low-rate initial production (LRIP) decision scheduled for 1QFY06. The OA will evaluate a pre-production system and will not include developmental flight tests because of a lack of flight-qualified systems, but will include C-130 aircraft installation measurements and ground tests. DOT&E considers the draft OA plan to be adequate to support the LRIP decision. FY05/FY06 operational testing on both the C-130 and F-16 precedes the Milestone III decision in 1QFY07 for the C-130 and F-16 Group B production.

TEST AND EVALUATION ASSESSMENT

An initial draft TEMP, which addresses the Core phase, is currently in review. This draft TEMP and an OA test plan must be fully coordinated and approved before the test begins. Spirals 1, 2, and 3 will require updated versions of the TEMP. Although DOT&E considers the OA plan adequate, test results will include only minimal flight testing at best, and will not use production-representative systems. This increases the risk that the system will enter LRIP with effectiveness and suitability deficiencies that will require corrections prior to fielding on several aircraft types. The program office should mitigate this risk by minimizing LRIP deliveries (less than 10 percent of the planned and funded C-130 and F-16 purchase).

The program plans to use a favorable Milestone III decision as clearance to buy all units for other installations (e.g. A-10, C-17, C-130J, MH-53) with only minimal testing to verify each installation. The ALR-69A should be tested on each individual aircraft prior to the acquisition decision-makers approval of the acquisition of those units. This issue will be resolved in the TEMP review and approval process.